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## Cobra Probes Containing Replaceable Thermocouples

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A modification of the basic design of cobra probes provides for relatively easy replacement of broken thermocouples. [Cobra probes are standard tube-type pressure probes that may also contain thermocouples and that are routinely used in wind tunnels and aeronautical hardware. They are so named because in side views, they resemble a cobra poised

to attack.] Heretofore, there has been no easy way to replace a broken thermocouple in a cobra probe; instead, it has been necessary to break the probe apart and then rebuild it, typically at a cost between \$2,000 and \$4,000 (2004 prices). The modified design makes it possible to replace the thermocouple, in minimal time and at relatively low cost, by insert-

ing new thermocouple wire in a tube.

*This work was done by John Jones and Adam Redding of Glenn Research Center.*

*Inquiries concerning rights for the commercial use of this invention should be addressed to NASA Glenn Research Center, Innovative Partnerships Office, Attn: Steve Fedor, Mail Stop 4-8, 21000 Brookpark Road, Cleveland, Ohio 44135. Refer to LEW-17832-1.*